

US EPA ARCHIVE DOCUMENT

**2011Addendum: An Assessment of
Environmental Problems Associated with Recycling of
Hazardous Secondary Materials**

June 30, 2011



U.S. Environmental Protection Agency
Office of Resource Conservation and Recovery

DISCLAIMER

Mention of trade names, products or services in this document does not convey, and should not be interpreted to convey, official EPA approval, endorsement, or recommendation, or lack thereof.

ACKNOWLEDGEMENTS

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Staff members of the Recycling and Generator Branch, Office of Resource Conservation and Recovery, EPA Headquarters were responsible for providing objectives of the addendum, reviewing the methodology, helping to identify cases for further investigation, reviewing draft write-ups and drafting portions of the study. The EPA Work Assignment Manager was Amanda Geldard.

EPA was responsible for identifying potential cases, including those submitted through public comment as part of the Definition of Solid Waste Rulemaking process. Staff of ICF International were responsible for investigating potential cases, assembling relevant information, contacting persons with knowledge of selected cases, and drafting descriptions of each case.

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I. Introduction

In January 2007, U.S. Environmental Protection Agency (EPA) published [*An Assessment of Environmental Problems Associated with Recycling of Hazardous Secondary Materials*](#) (also known as the “environmental problems study” or “study”). This study was conducted as part of EPA’s effort to revise the current “definition of solid waste” under the Resource Conservation and Recovery Act (RCRA), as it pertains to recycling of hazardous wastes and other hazardous secondary materials. In particular, the information in this study was compiled to assist the Agency in making decisions as to the scope and substance of these regulatory revisions. Since the study was published in 2007, EPA has continued to assess new reports of environmental problems associated with the recycling of hazardous secondary materials. A first [addendum to the study](#) was published in July 2008. This 2011 Addendum is EPA’s second update to the study.

II. Scope of the Study

The general goal of the study is to identify and characterize cases of environmental damage that have been attributed to some type of hazardous material recycling activity, and that are relevant for the purpose of evaluating the impacts of the DSW rulemaking effort. In this 2011 Addendum, EPA evaluated nine potential damage cases that were identified after the 2008 DSW final rule was published.

III. Methodology

The nine potential damage cases were collected from news media and from recent enforcement cases that were forwarded to us by state and EPA regional staff. For this addendum, we did not conduct a general search for additional damage cases and instead only evaluated those that have been brought to our attention since we published the last addendum to the study in 2008.

EPA used the same methodology to evaluate the nine potential damage cases as we used for the 2007 environmental problems study and its 2008 addendum. Detailed information regarding EPA’s methodology can be found in the [2007 Environmental Problems Study](#).

IV. Summary

Of the nine potential damage cases considered, five are determined to be new recycling damage cases fit to be included in this second addendum to the study. Additionally, one potential damage case was already included in the 2007 study and we are providing an update to this damage case in this Addendum.

This Addendum includes the following Appendices:

Appendix I: Additional Damage Cases from Recycling of Hazardous Secondary Materials

This 2011 Addendum adds five new damage case sites and one update to a damage case included in the 2007 study. These damage cases were found to meet the scope of the original environmental problems study. A summary of the additional damage cases and individual profiles are located in the Addendum's Appendix I.

Appendix II: Additional Sites Considered But Not Included in the Damage Case Analysis

In preparing the 2011 Addendum, EPA identified and reviewed three additional, potential damage cases, but decided they would not be included in the environmental problems study because the damage in each case was determined to be unrelated to recycling of hazardous secondary materials. The Addendum's Appendix II contains a summary of sites considered but not included in the study.

Appendix III: Analysis of Recycling Damage Case Facilities that Are Also Intermediate Facilities

The analysis identified a total of two intermediate facilities out of seven included in the 2011 addendum. Although these facilities are intermediate facilities, both also manage some waste on site. EPA used the same methodology for determining intermediate facilities as we did in the [2008 addendum](#). The 2011 Addendum's Appendix III includes a table of these intermediate facilities.

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**Appendix 1: Additional Damage Cases from Recycling of
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Additional Damage Cases from Recycling of Hazardous Secondary Materials

Site Name	State
Romic Environmental Technologies	Arizona
Romic Environmental Technologies	California
Hassan Barrel Company, Inc.*	Indiana
American Iron Oxide Company (AMROX)	Pennsylvania
Horsehead Resource Development Corporation	Pennsylvania
Blue Ridge Solvents and Coatings, Inc.	Virginia

* Damage cases are cited in *An Assessment of Environmental Problems Associated with Recycling of Hazardous Secondary Materials* (2007) and updated with new information.

Site Name:	Romic Environmental Technologies, Chandler (Romic Southwest)
EPA ID No.:	AZD009015389
Address:	6760 West Allison Road, Chandler, AZ 85226
County:	Maricopa
NPL Site:	No
In CERCLIS Database:	No

Site History and Description of Recycling Operation: Romic Environmental Technologies (Romic) operated an approximately three-acre hazardous waste storage, treatment, and recycling facility in the Lone Butte Industrial Park near Chandler Arizona. This industrial park is located within the Gila River Indian Community (GRIC), on lands held in trust for GRIC.

The facility began operation in 1975 under ownership of Southwest Solvents. In 1988, Romic purchased the facility from Southwest Solvents and continued operations, which were primarily solvent recycling through distillation. The facility received on average about 13,000 tons of waste per year, about half of which was considered hazardous by the USEPA. Wastes received by the facility came from a variety of industries, including dry cleaning, paint manufacturing, aerospace, and automotive industries. The facility also received household hazardous wastes from collection events. In addition to solvent recycling, the facility acted as an intermediate facility, including consolidating solids for off-site transfer and disposal and conducting fuel blending. Other site activities included antifreeze recycling and other management methods. No wastes were disposed on site; all wastes were transferred off site for disposal or re-use.

In 1981, Southwest Solvents submitted Part A of a RCRA hazardous waste permit application and was granted interim status by the USEPA. The facility continued to operate under interim status until Romic acquired the facility in 1988. At that time, Romic submitted a revised Part A application as well as the more extensive Part B application for a permit. The facility remained under interim permit status pending further review by the USEPA. During this period, Romic complied with a number of RCRA requirements including completion of a number of remediation activities to clean up contamination, and conducted a remedial investigation (RI) in 2004. In 2005, Romic was fined \$67,888 for multiple hazardous waste violations related to improper storage and labeling of hazardous waste and other violation. The company corrected the violations and also spent \$100,800 on life-saving equipment for the Gila River Indian Community Fire Department and air monitoring and meteorological equipment for the Gila River Indian Community Department of Environmental Quality.

Also in 2005, Romic submitted a final revised Part B application. However the landowner, GRIC, would not sign the application and therefore the permit application was denied in 2007. Romic then submitted a facility closure plan, which was approved in 2008. Romic is currently conducting site cleanup activities.

Description of Contamination: In 2007, the USEPA issued an Administrative Order of Consent (AOC) to Romic to investigate contamination on and around the site. It is believed that the groundwater

contamination at the Romic facility may be related to the operations of Southwest Solvents, which operated the facility prior to 1988 (3).

In accordance with a 1988 Consent Agreement, Romic conducted extensive soil cleanup upon purchasing the facility. However, a 2004 Remedial Investigation Report completed for the GRIC Department of Environmental Quality (DEQ) indicated that trichloroethylene (TCE), tetrachloroethylene (PCE), and 1,1-dichloroethylene (1,1-DCE) contamination in groundwater was above U.S. EPA Maximum Contaminant Levels (MCLs) close to and down gradient from the facility. Although the facility operated in an industrial park, its location is approximately 200 meters from a public drinking water well and up-gradient from irrigation wells.

Due to the RCRA permit denial, Romic prepared a closure plan in 2008 for cleanup of surface contamination. Under this plan, Romic will remove all remaining wastes, clean and decontaminate remaining equipment and structures, and send the resulting waste offsite for treatment and disposal. The estimated cost of this portion of the site cleanup is \$900,000 (8). Information about the costs of earlier site remedial activities is not available from the sources used for this damage case. Romic is working with U.S. EPA and GRIC DEQ to further investigate and implement corrective actions to address ground water contamination (8).

Sources of Information:

1. USEPA. Facility Registry System, Facility Detail Report. Romic Environmental Technologies Corporation Southwest. Accessed Online. May 2011:
http://oaspub.epa.gov/enviro/fii_query_dtl_disp_program_facility?pgm_sys_id_in=AZD009015389&pgm_sys_acrnm_in=RCRAINFO
2. USEPA. Envirofacts, Multisystem, Romic Environmental Technologies Corp Southwest. Accessed Online. May 2011:
http://iaspub.epa.gov/enviro/multisys2_v2.get_list?facility_uin=110000471249
3. USEPA. Region 9, Waste Programs. Romic Environmental Technologies Corporation Southwest Hazardous Waste Storage and Treatment Facility. Accessed Online. May 2011:
<http://www.epa.gov/region09/waste/romic/index.html#correctiveaction>
4. USEPA. "Permit Series List." RCRAInfo. May 2011.
5. USEPA. Region 9: Administrative Order On Consent. Romic Environmental Technologies Corporation. Accessed Online. May 2011:
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6. USEPA. Notice of Intent to Deny a RCRA Permit Application for Romic Environmental Technologies Corporation – Southwest. August 2007. Accessed Online. May 2011:
<http://www.epa.gov/region9/waste/romic/pdf/proposed-permit-decision.pdf>

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<http://yosemite.epa.gov/opa/admpress.nsf/9e50770d29adb32685257018004d06fd/9da557d9afa35dde852570d8005e178a!OpenDocument&Highlight=0,romic>
8. Romic Environmental Technologies Corp. Romic Southwest Facility. Closure Plan. Submitted to US Environmental Protection Agency Region 9. August 2008. Accessed Online. May 2011:
<http://www.epa.gov/region09/waste/romic/pdf/RSW-Closure-Plan-final-August-2008.pdf>

Site Name:	Romic Environmental Technologies, E. Palo Alto, CA
EPA ID No.:	CAD009452657
Address:	2081 Bay road, East Palo Alto, CA, 94303
County:	San Mateo
NPL Site:	No
In CERCLIS Database:	CAN000908403

Site History and Description of Recycling Operation: The Romic Environmental Technologies (Romic) facility in East Palo Alto, California, is a 12.6-acre former hazardous waste management facility. It is located in an industrial area approximately half mile west of San Francisco Bay. The facility fence line borders tidal marshes and other industrial facilities. The nearest residences are about 2,000 feet to the west, with the closest school being about a half mile.

The site first began operation as a chemical storage facility under previous owners in 1956. Romic began operating the facility in 1963, purchased it in 1979, and continued to operate it until it closed in 2007. Romic performed a combination of hazardous waste storage, treatment, and recycling operations and received hazardous waste from a number of industrial business, including wastes such as paint thinner and paints, antifreeze, oils, inks, adhesives, and solvents. Waste management methods included storage, solvent recycling using distillation, incineration, and other treatment. In addition, waste management method information included in the facility's biennial hazardous waste reports indicate that the facility also served as an intermediate facility for some wastes. Prior to closure, the facility managed an estimated 35,000 tons of waste per year.

The Romic facility has a history of violations and incidents including a 2006 tanker truck spill, employee burn incidents in 2004 and 2006, and a 2007 transporter incident. The 2006 spill involved 4,000 gallons of used, mixed organic solvents, including hydroxylamine, monoethanolamine, toluene, and acetonitrile. The solvents began reacting inside the tanker truck resulting a release of a fine mist that settled over an empty lot owned by Romic, portions of Bay Road, and adjacent parcels that included a Pacific Gas and Electric (PG&E) substation and nearby wetlands. In both of the burn incidents, employees were burned by ignitable vapors that were not properly drained from tanks other equipment. In the 2007 transporter incident, a highway exit ramp in Bakersfield, California, was shut down for several hours due to leakage from a truck containing drums shipped from the Romic facility.

The facility also was subject to a 2005 settlement with the California Department of Toxic Substances Control (DTSC) for a number of violations that occurred from 1999 to 2004. Because of this history of violations, in 2007 the DTSC ordered Romic to close the facility and implement its cleanup plan. The facility stopped accepting waste in 2007, and all stored hazardous waste was removed from the site that year.

Description of Contamination: DTSC and U.S. EPA site investigations concluded that Romic's operations contaminated soil and groundwater across most of the site and to a depth of at least 80 feet. The primary contaminants are volatile organic compounds (VOCs), such as the solvent trichloroethene. The soil and groundwater contamination is primarily attributed to the spills, overflows, flooding events,

and other accidental releases around the central process area. A groundwater extraction and treatment system was operated as a site remediation strategy from 1993 until 2005. From 2003 – 2005 Romic conducted enhanced reductive dechlorination to remediate groundwater.

Following closure in 2007, the DTSC, U.S. EPA, and Romic agreed to a closure and cleanup plan for the facility consisting of two phases. Phase 1, which was overseen by DTSC and was completed in 2010, involved the closure, cleaning, and removal of the aboveground waste management units and equipment, as well as and cleanup of surface contamination. Phase 2, which is underway with U.S. EPA supervision, addresses the remediation of subsurface soil and groundwater. The Final Remedy to address soil and groundwater contamination will use enhanced biological treatment, monitored natural attenuation, excavation, and removal of contaminated soils, land use restrictions, and maintenance of the existing site cover. The estimated cost for closure and cleanup of the facility is \$2.5 million.

Sources of Information:

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http://iaspub.epa.gov/enviro/fii_query_dtl_disp_program_facility?pgm_sys_id_in=CAN000908403&pgm_sys_acrnm_in=CERCLIS
2. USEPA. Superfund Site Information. Romic East Palo Alto. Accessed Online. May 2011:
<http://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0908403>
3. USEPA. Pacific Southwest, Region 9, Waste. Romic Environmental Technologies, East Palo Alto, CA. Accessed Online. May 2011: <http://www.epa.gov/region9/waste/romic-eastpaloalto/#moreinfo>
4. USEPA. "Permit Series List." RCRAInfo. May 2011.
5. California Department of Toxic Substance Control. Fact Sheet. Romic's Draft Closure Plan Open for Public Comment. April 2008. Accessed Online. May 2011:
http://www.dtsc.ca.gov/HazardousWaste/Projects/upload/Romic_FS_DClosurePlan_0408.pdf
6. USEPA. US EPA Selects Final Cleanup Plan for Former Romic East Palo Alto Facility. July 2008. Accessed Online. May 2011: <http://www.epa.gov/region9/waste/romic-eastpaloalto/pdf/Romic-Final-Decision-FactSheet-Eng-0708.pdf>
7. Final Draft: Comprehensive Site-Wide Sampling and analyses Plan, Former Romic Environmental Technologies Corporation Facility. Prepared for Bay Enterprises, Prepared by Iris Environmental. March 2011. Accessed Online. May 2011:
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8. California Department of Toxic Substance Control. Romic Environmental Technologies Corporation, Enforcement Order. 2007. Accessed Online. May 2011:
http://www.dtsc.ca.gov/HazardousWaste/Projects/upload/ROMIC_ENF_EO_2007.pdf

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9. Official Announcement and Shut-down order on Romic. Palo Alto Online. May 2007.
Accessed Online. May 2011: http://www.paloaltoonline.com/news/show_story.php?id=5146

Site Name:	Hassan Barrel Company Inc
EPA ID No.:	IND078902202
Address:	1605 Summer Street, Fort Wayne, IN, 46857
County:	Allen
NPL Site:	No
In CERCLIS Database:	INN000509942

Site History and Description of Recycling Operation: From 1954 to 2003, the Hassan Barrel Company in Fort Wayne, Indiana, operated as a barrel recycling facility that cleaned and repainted used industrial barrels. During its years of operation, the seven-acre facility received barrels, many containing hazardous wastes, from at least 400 companies. The facility closed in 2003 and the facility owner abandoned thousands of barrels and other hazardous waste on the site.

Management of waste at the site included disposal in open pits and manmade lagoons, both in drums and discharges of liquids (l). The company did not have a RCRA Treatment, Storage and Disposal permit, and the State of Indiana had cited the company for a number of state violations between 1982 and 2003. Citations had been issued by the state for improper records, lack of emergency planning, and improper container marking or labeling, among other issues.

Description of Contamination:

The facility was located in a residential area, surrounded primarily by private homes and two schools only a few blocks away. EPA's site investigation found hazardous wastes at locations around the site, including wastes in leaking barrels, dumpsters, and open pits. EPA testing of soil and water in an onsite ditch that flowed to a nearby stream were contaminated with a number of hazardous materials including barium, cadmium, chromium, lead, and traces of PCBs. EPA also determined from seized records that testing on the site while still in operation had found dichloroethene, tetrachloroethane and trichloroethene in soil. EPA commenced emergency cleanup of the facility under CERCLA authority, spending \$1.7 million between 2004 and 2008, and removing 10,000 barrels, about half of which contained hazardous waste. As of 2008 EPA expected at least another \$1.3 million to removing up to 10,000 cubic yards of contaminated soil and other waste.

In 2008 Alan Hersh, the president of Hassan Barrel Company, pleaded guilty to one felony RCRA violation for the illegal storage and management of hazardous wastes on the site. This sentence included 15 months in prison and a \$1.7 million dollar fine for the EPA for cleanup costs. In addition, EPA is seeking additional funding for cleanup costs from about 400 companies that sent materials to the facility.

Sources of Information:

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2. Stockman, Dan. *Used-barrel business leaves Toxic Legacy*. The Journal gazette. March 8 2009. Accessed Online. May 2011:
<http://www.journalgazette.net/apps/pbcs.dll/article?AID=/20090308/LOCAL10/303089920>
3. Fort Wayne Recycler Gets Jail Time. Wane.com. March 3 2009. Accessed Online. May 2011:
http://www.wane.com/dpp/news/local_ap_toxic_waste_sentencing_200903030725_rev1
4. USEPA. Superfund Site Information. Hassan Barrel Site. Accessed Online. May 2011:
<http://cumulis.epa.gov/supercpad/cursites/cactinfo.cfm?id=0509942>
5. USEPA. Region 5 Enforcement and Compliance. March 2009 Significant cases. Accessed Online. May 2011: <http://www.epa.gov/region5/enforcement/cases/cases200903.html#fort>
6. USEPA. "Permit Series List." RCRAInfo. May 2011.
7. USEPA. On Scene Coordinator, Pollution Report Profile. Hassan Barrel Company. Accessed Online. May 2011:
http://www.epaossc.org/site/polrep_profile.aspx?site_id=1136&counter=1846

Site Name:	American Iron Oxide Company (AMROX)
EPA ID No:	PAR000008367
Address:	2 Wheeling Pittsburgh Steel Drive, Allenport, PA 15412
County:	Washington
NPL Site:	No
In CERCLIS Database	No

Site History and Description of Recycling Operation: The AMROX facility in Allenport, Pennsylvania, began recycling spent pickle liquor from steel manufacturing in 1995 and the facility currently continues this operation. Pickle liquor contains hydrochloric acid and is used in steelmaking to remove iron scale buildup from the surface of the steel. AMROX recycles spent pickle liquor into hydrochloric acid and iron oxide.

AMROX uses a pyrohydrolysis to generate an 18% by weight hydrochloric acid solution. AMROX also uses an IROX process to remove silica and metals from the spent pickle liquor in order to produce a higher purity iron oxide.

From 1995 until 1999, AMROX accepted spent pickle liquor under two regulatory mechanisms: Spent pickle liquor from designated generators that met certain chemical parameters was deemed a 'co-product' and was exempt from Pennsylvania Department of Environmental Protection's (PADEP) requirements pertaining to solid and hazardous waste. Spent pickle liquor that was not deemed a co-product, either because it did not meet the designated chemical parameters or was not produced by a designated generator, was accepted by AMROX as a hazardous waste pursuant to a 'hazardous waste storage permit-by-rule.'

PADEP adopted most of the EPA RCRA regulations in 1999, eliminating the regulations under which AMROX had been operating. At that point, PADEP allowed AMROX to continue recycling spent pickle liquor under a variance authorized under 40 CFR 260.31(b).

Although the PADEP believes that the facility would qualify as a recycler of hazardous secondary materials, AMROX has not submitted a notification for this designation. However, the variance only allows AMROX to accept spent pickle liquor from specific generators, rather than any "hazardous secondary materials." The variance requires that to qualify as legitimate recycler AMROX must demonstrate that it sells the produced iron oxide and returns the regenerated acid back to the steel plants.

Description of Contamination: In September 1997, AMROX allowed hazardous waste sludge from their IROX process to spill onto the ground. Instead of properly containing and collecting this release, AMROX washed the waste into an adjacent railroad bed. PADEP fined AMROX \$55,000 for this violation. In 2004, AMROX's two storage tanks failed and spilled the spent pickle liquor into the surrounding asphalt-paved area and into the storm drain. The storage tanks are located only 50 feet from a playground (see Figure 1). DEP was also concerned about air pollution from metals in the spent pickle liquor which is why the variance contains limits on metal concentration in the spent pickle liquor. PADEP entered into a consent order and agreement with AMROX in August 2005 under which AMROX agreed to resolve various tank and waste issues, including establishing an inspection/repair

schedule the remaining acid tanks. In 2006, PADEP fined AMROX \$150,000 for outstanding air, waste, and water violations involving the release of acid and iron oxide into the environment.

On Aug. 11, 2009, PADEP discovered a 32,000-gallon discharge of pickle liquor during a routine site visit. The discharge mixed with process water and stormwater to flood the containment unit beneath the tanks. Tests taken around the tanks at the time of the discovery indicated pH levels ranging from zero to one, a range consistent with hydrochloric acid, which is a major component of the pickle liquor AMROX manages.

Figure 1. Ruptured Tank at the AMROX Facility and Nearby Community Playground



PADEP reviewed the company's inspection records and learned of multiple and persistent leaks from five of the ten tanks in operation from May 23 to August 6, 2009. These issues were in addition to defects that have required repair over the previous four years, including interior and exterior cracks and patch failures.

On or about April 18, 2011, an aboveground storage tank at the facility split open, releasing approximately 27,300 gallons of regenerated hydrochloric acid solution, with a pH of less than 1.0. At the time of the release, the emergency containment area at the facility contained accumulated water and was not able to contain the released volume of hydrochloric acid, and hydrochloric acid overflowed from the emergency containment area.

PADEP issued an Administrative Order on April 27, 2011, requiring AMROX to evaluate several acid tanks at the facility. Among other things, the April 27, 2011 Administrative Order required AMROX to

reduce the volume by half within eight remaining tanks, and demonstrate that it would be safe to allow the tanks to continue in operation. AMROX did reduce the contents of the tanks to 50% of their capacity, but failed to document the integrity and fitness for operation of the tanks. On May 11, 2011, PADEP and a retained expert inspected the failed tank and could not identify an obvious cause for the failure. On May 5 and May 11, 2011, the PADEP observed acid continuing to leak from various tanks, as well as deteriorated concrete supports beneath one or more of these tanks. On May 12, 2011 PADEP ordered AMROX to empty several older acid tanks. AMROX subsequently provided an engineering analysis that with the installation of additional reinforcing bands around each tank that the tanks would remain structurally sound at 50% capacity. PADEP issued a third order on May 18, 2011 requiring an accelerated series of tank inspections and a failure analysis of the damaged tank.

Sources of Information:

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2. AMROX EHB decision. Excerpt provided by EPA.
3. Commonwealth of Pennsylvania Department of Environmental Protection. "American Iron Oxide to Pay \$150,000 to Settle Outstanding Violations." 24 October 2006.
<http://www.portal.state.pa.us/portal/server.pt/community/newsroom/14287?id=1040&typeid=1>
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<http://www.portal.state.pa.us/portal/server.pt/community/newsroom/14287?id=2348&typeid=1>
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6. Leadbetter, Honorable Bonnie Brigance. Opinion in the Commonwealth Court of Pennsylvania, Wheeling-Pittsburgh Steel Corporation and American Iron Oxide Company, Petitioners v. Department of Environmental Protection. 6 August 2009.
http://www.aopc.org/OpPosting/Cwealth/out/1297CD08_8-6-09.pdf
7. Spadaro, Carl. Commonwealth of Pennsylvania Department of Environmental Protection. Personal communication (email) with Amanda Geldard, U.S. Environmental Protection Agency, March 12, 2010.

Site Name:	Horsehead Corporation
EPA ID No:	PAD004372363, PAD981110570
Address:	300 Frankfort Road, Monaca, PA 15061
County:	Beaver
NPL Site:	No
In CERCLIS Database	PAD981110570 (Archived site)

Site History and Description of Recycling Operation: The Horsehead Corporation's facility in Monaca, Pennsylvania, operates as a secondary zinc smelter. Located 28 miles north of Pittsburgh, the electrothermic zinc smelter at this facility began operation in the 1920's to produce zinc metal and zinc oxide, including recycling materials containing zinc. For several years to the present, this facility only uses secondary zinc materials such as dross and skims from galvanizing operations as well as recycled K061 electric arc furnace dust as feedstock for zinc smelting. In 1996, PADEP clarified that these zinc secondary materials would be classified as coproducts under the current PADEP waste regulations. At present, those secondaries that might exhibit a hazardous characteristic for lead or cadmium leachability would be classified as by-products being reclaimed (40 CFR 261.2(c)(3)). Horsehead's zinc secondaries outdoor storage area has been subject to periodic wind dispersal and contaminated run-off problems.

Description of Contamination: On July 22, 2010, there was an explosion at the zinc refinery resulting in the death of two people. No fire or offsite contamination has been documented as result of this incident. The cost of repairs and cleanup totaled \$6.8 million for the refinery explosion. Following the explosion, the zinc refinery was shut down for repairs and an investigation and assessment of the damage. The cause of the explosion is still under investigation. Each of the ten columns used to produce zinc oxide and refined zinc metal in the refining facility have since been redesigned and rebuilt, and production resumed in the fourth quarter of 2010. As stated above, Horsehead's zinc secondaries storage area has had periodic wind dispersal and run-off problems.

Sources of Information:

1. Horsehead Corporation. Monaca, PA. Retrieved May 24, 2011, from http://www.horsehead.net/facility_content.php?ID=12
2. SEC Filings. (2011, March 16). Horsehead Holding Corp. Retrieved May 24, 2011, from <http://www.sec.gov/Archives/edgar/data/1385544/000095012311025813/142109e10vk.htm>
3. WTAE. (2010, July 26). Explosion at Horsehead Zinc Plant Kills 2; Victims Identified. WTAE.com. Retrieved May 24, 2011, from <http://www.wtae.com/r/24357952/detail.html>

Site Name:	Blue Ridge Solvents and Coatings, Inc.
EPA ID No:	VAR000503656
Address:	PO Box 759, Henry, Virginia 24102
County:	Franklin
NPL Site:	No
In CERCLIS Database	No

Site History and Description of Recycling Operation: Established in 2002, Blue Ridge Solvents & Coatings, Inc., manufactures and delivers industrial chemicals, paints, lacquers, thinners, powder coating, and water treatment chemicals. The company also recycles solvents using distillation and thin film evaporation. The facility contains storage and mixing tanks and solvent recovery equipment.

On April 7, 2010 the Commonwealth of Virginia Department of Environmental Quality (VADEQ) conducted a compliance evaluation of the facility, and found that the facility had failed to maintain records required under its permit. These records include monthly inspections for the fabric filter, logs of monitoring device observations for the thin film evaporator and microwave distillation unit, monthly and annual Hazardous Air Pollutant and Volatile Organic Compound (VOC) emissions, and scheduled and non-scheduled maintenance and operator training. The facility agreed to pay a \$7,826 fine to settle the violations. A fire occurred at the facility on June 4, 2010, causing property damage and requiring the evacuation of nearby homes.

Description of Contamination: On June 4, 2010 a fire started occurred in a mixing room, resulting in explosions from propane cylinders and chemicals. Firefighters extinguished the blaze within two hours. No injuries were reported. The fire was contained to the mixing room, which is a block and concrete building with a steel roof. A portion of the roof collapsed, but the storage tanks inside the room held their contents. Adjacent sections of the building sustained smoke and water damage.

Twenty residents who lived within a quarter-mile of the facility were evacuated from their homes and taken to emergency shelters for about two hours while firefighters battled the fire.

USEPA Region III and VADEQ are considering whether additional information or sampling at the facility is required or if corrective action is required by the facility.

Sources of Information:

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2. Wagoner, K.A. *The Franklin News Post*. “BREAKING NEWS: Fire forces evacuation of 20 Henry residents.” 4 June 2010. <http://www.thefranklinnewspost.com/article.cfm?ID=16449>

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**Addendum: An Assessment of
Environmental Problems Associated with Recycling of
Hazardous Secondary Materials**

**Appendix 2: Additional Sites Considered But
Not Included in the Damage Case Analysis**

Appendix 2
Additional Sites Considered But
Not Included in the Damage Case Analysis

Site Name	State	EPA/ RCRA ID	Reason Rejected
Bayer Cropscience, LP	West Virginia	WVD005005509	Damage Unrelated to Recycling
Environmental Quality Company	North Carolina	NCD982170292	Damage Unrelated to Recycling
Agrium Hartsville Rainbow Operations	South Carolina	SCD003350675	Damage Unrelated to Recycling

**Addendum: An Assessment of
Environmental Problems Associated with Recycling of
Hazardous Secondary Materials**

**Appendix 3: Analysis of Recycling Damage Cases that
Are Also Intermediate Facilities**

Analysis of Recycling Damage Cases that Are Also Intermediate Facilities

Site Name	BR Indicates Intermediate Facility	Damage Case Study Text Indicating Intermediate Facility
Romic Environmental Technologies, AZ	Yes	
Romic Environmental Technologies, CA	Yes	